

**SOURCE TEST PROTOCOL  
2018 SOURCE EVALUATION TESTING  
KAPSTONE KRAFT PAPER CORPORATION  
LONGVIEW  
LONGVIEW, WASHINGTON**

Prepared For:

**KAPSTONE KRAFT PAPER CORPORATION**  
300 Fibre Way  
Longview, WA 98632

For Submittal To:

**U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 10**  
1200 Sixth Avenue, Suite 900  
Seattle, WA 98101

Prepared By:

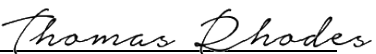
**MONTROSE AIR QUALITY SERVICES, LLC**  
13585 NE Whitaker Way  
Portland, OR 97230

Date Test Plan Issued: December 12, 2017  
Project Number: 006AS-213825

## REVIEW AND CERTIFICATION

I certify that to the best of my knowledge the information in this test protocol is complete and accurate and conforms to the requirements of the MAQS Quality Manual and ASTM D7036-04.

Name: Thomas Rhodes Title: Client Project Manager

Sign:  Date: 12/12/2017

I have reviewed, technically and editorially, details, and other appropriate written materials contained herein, and hereby certify that to the best of my knowledge the presented material is authentic and accurate and conforms to the requirements of the MAQS Quality Manual and ASTM D7036-04.

Name: Joe Heffernan III Title: Shop Manager

Sign:  Date: 12/12/2017

Test Plan Prepared by: Thomas Rhodes

## **SUMMARY INFORMATION**

### **Source Information**

Source Location: KapStone Kraft Paper Corporation  
Longview  
Longview, WA 98632

Plant Contact: Roberto Artiga  
Telephone: (360) 575-5570

Project Contact: Wayne Wooster  
Company: KapStone Kraft Paper Corporation  
Telephone: (360) 575-5578  
Email: wayne.wooster@kapstonepaper.com

Regulatory Agency: U.S. Environmental Protection Agency  
Contact: Roylene Cunningham  
Telephone: (206) 553-0513

Units: No. 4 M&D Sawdust Digester Inlet Valve Steam Vents

Purpose: Adherence with Information Request presented to KapStone by  
EPA Region 10, dated July 13, 2017.

Procedures: EPA 1/1A, 2, 4, 16, and 308

### **Testing Company Information**

Testing Firm: Montrose Air Quality Services, LLC  
13585 NE Whitaker Way  
Portland, OR 97230

Certification: Accredited AETB, Cert. No. 3925.01

Contact: Joe Heffernan                      Thomas Rhodes  
Title: Shop Manager                      Client Project Manager  
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Onsite QI: Joe Heffernan III, QSTI

Test Dates: January 17-18, 2018

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## **SECTION 1.0**

### **INTRODUCTION**

Montrose Air Quality Services, LLC (MAQS) has been contracted by KapStone Kraft Paper Corporation (KapStone) to perform a series of air emission tests at the facility located in Longview, WA.

Tests are scheduled to be conducted on January 17 through January 18, 2018 with a start time of approximately 8:30 A.M. each day. MAQS will perform the tests to measure the following emission parameters:

- Primary Parameters
  - Total Reduced Sulfur (TRS) – ppmvd, lb/hr, lb/ton ODP
  - Methanol – ppmvd, lb/hr, lb/ton ODP
- Facility Data
  - Applicable production data

MAQS will provide the test personnel and all of the necessary equipment to measure emissions as outlined in this protocol. Plant personnel will provide the process and production data to be included in the final report. This test protocol includes information on specific applications or modifications to standard procedures, descriptions of the facility and sampling locations, target test conditions, and the program schedule. Appendix A contains a summary of our quality assurance procedures and certifications for source testing. A copy of the July 13, 2017 EPA Information Request is included in Appendix B. MAQS's Field Work Safety Plan is included as Appendix C. A map showing the location of the facility is included in Appendix D.

## **SECTION 2.0**

### **SOURCE LOCATION INFORMATION**

#### **2.1 FACILITY DESCRIPTION**

The KapStone Kraft Paper Corp facility is located at 300 Fibre Way, Longview, WA 98632. The No. 4 M&D Sawdust Digester provides softwood sawdust pulp to the KapStone paper mill. The 2017 digester average production rate year to date is approximately 110 ton/day.

#### **2.2 SAMPLING LOCATIONS**

Information regarding the sampling location is presented below:

Sample location ID: Cyclone inlet  
Configuration: Cylindrical, horizontal  
Dimensions: Approximately 8 inches internal diameter  
Port locations: Approximately 33 inches (~4.1 duct diameters) upstream from nearest stack disturbance  
Approximately 55 inches (~6.9 duct diameters) downstream from nearest stack disturbance  
Port access: Ladder or scaffolding

Sample location ID: Roof Vent  
Configuration: Cylindrical, vertical  
Dimensions: Approximately 20 inches internal diameter  
Port locations: Approximately 175 inches (~8.8 duct diameters) upstream from stack exit  
Approximately 59 inches (~3.0 duct diameters) downstream from nearest stack disturbance  
Port access: Stairs to rooftop

Traverse point information is presented below:

- Flow measurements - 16 points total, 8 from each of two ports located 90<sup>0</sup> apart from one another
- Moisture, methanol, and TRS tests – single point – approximately centroid of the stack

## **SECTION 3.0**

### **TEST DESCRIPTION**

#### **3.1 PROGRAM OBJECTIVES**

The objectives of this test program are as follows:

- Adherence with Information Request presented to KapStone by EPA Region 10, dated July 13, 2017.

The results will be presented in units consistent with those listed in the Information Request.

#### **3.2 TEST CONDITIONS**

Plant personnel will establish the test conditions and will collect all applicable unit-operating data. MAQS will monitor the collection of process data, and will provide additional data collection as necessary to document operation.



### 3.3 PROGRAM SCHEDULE

The test program schedule is presented in Table 3-3.

**TABLE 3-3  
TEST SCHEDULE  
KAPSTONE KRAFT PAPER - LONGVIEW**

Date	Location and Activity	Sample Runs	Sample Duration
January 16, 2018	Travel, set-up	--	--
	<u>Cyclone Inlet Source Test</u>	--	--
	Methanol	1, 2	3 hours
	TRS	1, 2	3 hours
	Volumetric flow rate	1, 2	3 hours
January 17, 2018	Moisture content	1, 2	3 hours
Start at 8:30 A.M.	<u>Roof Vent Source Test</u>	--	--
	Methanol	1, 2	3 hours
	TRS	1, 2	3 hours
	Volumetric flow rate	1, 2	3 hours
	Moisture content	1, 2	3 hours
	<u>Cyclone Inlet Source Test</u>	--	--
	Methanol	3	3 hours
	TRS	3	3 hours
	Volumetric flow rate	3	3 hours
	Moisture content	3	3 hours
January 18, 2018	<u>Roof Vent Source Test</u>	--	--
	Methanol	3	3 hours
	TRS	3	3 hours
	Volumetric flow rate	3	3 hours
	Moisture content	3	3 hours
January 19, 2018	Contingency	--	--
March 5, 2018	Report submittal deadline	--	--

### 3.4 MAQS TEST PROCEDURES

The test procedures to be used in this testing program are summarized in Table 3-4. Additional information on specific applications of and modifications to standard procedures are presented in the following sub-sections.

**TABLE 3-4  
TEST PROCEDURES  
KAPSTONE KRAFT PAPER - LONGVIEW**

Parameter	Measurement Principle	Reference Method
TRS	Gas chromatography w/ flame photometric	EPA 16
Methanol	Gas chromatography w/ flame ionization	EPA 308
Volumetric flow rate	pitot / temperature traverse	EPA 1/1A, 2
Moisture content	Impinger weight gain	EPA 4

#### 3.4.1 Total Reduced Sulfur Emissions

Concentrations of Total Reduced Sulfur (TRS) will be measured using EPA Method 16. Pertinent information regarding the performance of the method is presented below:

- Method Deviations: Due to the large amount of sawdust present in the gas stream of the cyclone inlet, a heated cyclone will be used prior to the citrate buffer impingers to reduce the amount of entrained sawdust.
- Target and/or Minimum Required Sample Duration: Sixteen (16) injections over a period of not less than 3 hours or more than 6 hours.

#### 3.4.2 Methanol

Concentrations of Methanol will be measured by gas chromatographic analysis of sample gas collected per EPA Method 308. Pertinent information regarding the performance of the method is presented below:

- Sampling Media: DI water and silica gel sorbent tube
- Target and/or Minimum Required Sample Volume: 60 L – Roof Vent
- Target and/or Minimum Required Sample Volume: 30 L – Cyclone Inlet

- Method Deviations: Due to the large amount of sawdust present in the gas stream of the cyclone inlet, a heated cyclone will be used prior to the impingers to reduce the amount of sawdust in the sample.
- Analytical Laboratory: Enthalpy Analytical – Durham, NC

### **3.4.3 Moisture**

Moisture will be measured using EPA Method 4. Pertinent information regarding the performance of the methods are presented below:

- Method Deviations: Extra impingers will be used for the sampling at the cyclone inlet due to the high moisture content expected
- Target and/or Minimum Required Sample Duration: 180 minutes
- Target and/or Minimum Required Sample Volume: 60 L – Roof Vent
- Target and/or Minimum Required Sample Volume: 30 L – Cyclone Inlet

### **3.4.6 Volumetric Flow Rate**

Stack gas volumetric flow rates will be determined by the procedures outlined in EPA Methods 1/1A and 2. Pertinent information regarding the performance of the method is presented below:

- Method Deviations: Due to the pulsing nature of the flow at the cyclone inlet, flow will be logged and averaged over approximately 10 seconds at each traverse point

### **3.4.8 Process Data**

The plant's unit operating data will be used to document process conditions during the test runs. Unit operating data will be provided by plant personnel. KapStone will provide process/production data as required in the July 13, 2017 EPA Information Request (Appendix B).

## **SECTION 4.0**

### **QUALITY ASSURANCE AND REPORTING**

#### **4.1 SAMPLING AND ANALYTICAL QA/QC**

MAQS has instituted a rigorous QA/QC program for all of its air pollution testing. The program ensures that the emission data reported are as accurate as possible. The procedures included in the cited reference methods will be followed for all steps of preparation, sampling, calibration, and analysis. MAQS will be responsible for preparation, calibration and cleaning of the sampling apparatus. MAQS will also conduct the sampling and sample recovery, storage and shipping.

Contract laboratories will conduct some of the preparation and sample analyses as needed. The laboratories that will be used are established leaders in development and performance of the reference methods for which they have been selected. Their credentials for adherence to the required quality assurance procedures are well known.

#### **4.2 QUALITY CONTROL REQUIREMENTS**

Our Quality Assurance Program Summary, located in Appendix A, provides our equipment maintenance and calibration schedule, quality control acceptance limits, and any corrective action that may be needed. For additional quality control, MAQS will follow the procedures outlined below:

- All field equipment will undergo a visual inspection prior to testing and will include pre-test calibration checks.
- Glassware will be visually inspected and will be given a final field rinse prior to testing.
- Reagents will be made fresh daily where needed. A new reagent blank will be retained for every new stock of reagent.

#### **4.3 QUALITY ASSURANCE AUDITS**

Quality assurance audits will be conducted as part of the test program to ensure that the final results are calculated from the highest quality data. The audits are listed below:

- The dry gas meters used during the tests will be calibrated using a critical orifice (with a known calibration factor) before the commencement of the testing program. The meters will then be checked immediately following the program. The meter values must agree within  $\pm 5$  percent of the orifice

value. If the meters do not pass, the results will have to be evaluated as to their accuracy.

- All pitot tubes used during the test program will be visually checked and measured according to the calibration procedures of EPA Method 2 to ensure eligibility to assign a baseline pitot coefficient of 0.84
- Thermocouples attached to the pitots and probes are calibrated in the field using EPA Alternate Method 11. A single-point calibration on each thermocouple system using a reference thermometer is performed. Thermocouples must agree within  $\pm 2^{\circ}\text{F}$  with the reference thermometer. Also, prior to use, thermocouple systems are checked for ambient temperature before heaters are started.

#### **4.4 REPORT FORMAT**

MAQS will prepare a final report to present the test data, calculations, descriptions and results. The report will include a series of appendices to present copies of the field data sheets, equipment calibration data, and example calculations. MAQS uses computer spreadsheets to calculate results from field data sheets and laboratory results. One run of every method performed is also hand calculated. The hand calculations are checked against the spreadsheet results and included in the example calculation appendix of the final report. MAQS understands the “Standard Condition(s)” that are to be used are 29.92 inches of mercury and 68 °F.

The content of the final report will include the information required in the July 13, 2017 EPA Information Request (Appendix B).

The report will be divided into various sections describing the different aspects of the source testing program. Table 4-1 presents a typical Table of Contents to be followed during preparation of each final report. Prior to release by MAQS, each report will be reviewed and certified by the project manager and either his supervisor or a peer. The final report will be submitted to EPA no later than forty five (45) days after the completion of testing.

## **TABLE 4-1 TYPICAL REPORT FORMAT**

---

**Title Page**

**Certification of Report**

**Summary Information**

**Table of Contents**

**Section**

- 1.0 Introduction and Summary (includes summary tables of average results)
- 2.0 Source Location Information
  - 2.1 Facility Description
  - 2.2 Sampling Location
- 3.0 Program Description
  - 3.1 Test Program Objectives
  - 3.2 Test Conditions
  - 3.3 Program Test Schedule
  - 3.4 Test Procedures
- 4.0 Quality Assurance and Reporting
  - 4.1 Sampling and Analytical QA/QC
  - 4.2 Quality Control Requirements
  - 4.3 Data Reduction Procedures
- 5.0 Discussion of Results
  - 5.1 Detailed Results (includes summary tables of individual results)
  - 5.2 Discussion of Problems/Deviations/Exceptions

**Appendices**

- A Quality Assurance
  - B Data Sheets
  - C Emission Calculations
  - D Laboratory Reports
  - E RM Strip Charts (if applicable)
  - F July 13, 2017 EPA Information Request
  - G Test Plan & Correspondence
-

## 4.5 AVERAGE RESULT SUMMARY

Table 4-2 presents the typical tabular format that will be used to summarize the results in the final source test report. Separate tables will outline the results for each target analyte and compare them to their respective emissions limits.

**TABLE 4-2  
RESULT SUMMARY  
SPECIES EMISSIONS  
CLIENT COMPANY – FACILITY  
SOURCE UNIT**

Test No.:	1-XX	2-XX	3-XX	Average
<b>Date:</b>	X	X	X	--
<b>Time:</b>	X	X	X	--
<b>Process Data:</b>				
<b>Flue Gas:</b>				
O <sub>2</sub> , % volume dry	X	X	X	X
CO <sub>2</sub> , % volume dry	X	X	X	X
Flue gas temperature °F	X	X	X	X
Moisture content, % volume	X	X	X	X
Volumetric flow rate, dscfm	X	X	X	X
<b>Species Emissions:</b>				
ppm volume dry	X	X	X	X
lb/hr	X	X	X	X
lb/ton ODP	X	X	X	X

## **SECTION 5.0**

### **PLANT ENTRY AND SAFETY**

#### **5.1 SAFETY RESPONSIBILITIES**

The facility plant safety coordinator is responsible for ensuring routine compliance with plant entry, health, and safety requirements. The facility plant manager has the authority to impose or waive facility restrictions. The MAQS test team leader has the authority to negotiate any deviations from the facility restrictions with the plant site safety coordinator.

#### **5.2 SAFETY PROGRAM**

MAQS has a comprehensive health and safety program that satisfies State and Federal OSHA requirements. The program includes an Illness and Injury Prevention Program, site-specific safety meetings and training in safety awareness and procedures. The basic elements include: (1) written policies and procedures; (2) routine training of employees and supervisors; (3) medical monitoring when necessary; (4) use of personal protection equipment; (5) hazard communication; (6) pre-test safety meetings; and (7) routine surveillance of on-going test work.

MAQS will provide all safety-related equipment to its employees. The equipment will include, but not limited to; hard hats, safety shoes, safety glasses that seal around the eyes (or goggles), hearing protection, and hand protection.

#### **5.3 SAFETY REQUIREMENTS**

All test personnel will adhere to the following standard safety measures:

- Attend safety indoctrination session upon initial arrival at the plant and complete the safety checklist.
- Confine selves to the testing and administration areas only.
- Wear hard hats at all times on-site where designated.
- Wear protective shoes or boots in test area.
- Wear advanced protective eyewear and gloves in designated areas.
- Use full body harnesses and follow OSHA tie-off standards.
- Know the location of first aid equipment and fire extinguishers.
- No smoking anywhere on the KapStone Longview Mill facility.



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**APPENDIX A**

**QUALITY ASSURANCE AND TESTING  
CERTIFICATIONS**

# QUALITY ASSURANCE PROGRAM SUMMARY AND CERTIFICATIONS

Montrose Air Quality Services, LLC (MAQS) ensures the quality and validity of its emission measurement and reporting procedures through a rigorous quality assurance (QA) program. The program is developed and administered by internal QA personnel and encompasses eight major areas:

1. Development and use of an internal QA manual.
2. QA reviews of reports, laboratory work, and field testing.
3. Equipment calibration and maintenance.
4. Chain of custody.
5. Continuous training.
6. Knowledge of current test methods.
7. Audit Program.
8. Uncertainty of results.

Each of these areas is discussed individually below.

**Quality Assurance Manual.** MAQS has prepared a QA Manual according to EPA guidelines and ASTM D-7036. The manual serves to document and formalize all of MAQS's QA efforts. The manual is constantly updated, and each employee involved in technical services for emission measurements is required to read, understand its contents, and sign a statement that all work they perform will conform to its practices. The manual includes details on the other six QA areas discussed below.

**QA Reviews.** MAQS's review procedure includes review of each source test report by the QA Manager or equivalent position including data input, calculations and averages, and report text. The laboratory manager or equivalent reviews all laboratory work, and the qualified individual on-site reviews all field work and data sheets.

The most important review is the one that takes place before a test program begins. The QA Manager works with testing personnel to prepare and review test protocols. Test protocol review includes selection of appropriate test procedures, evaluation of any interferences or other restrictions that might preclude use of standard test procedures, and evaluation and/or development of alternate procedures.

**Equipment Calibration and Maintenance.** The equipment used to conduct the emission measurements is maintained according to the manufacturer's instructions to ensure proper operation. In addition to the maintenance program, calibrations are carried out on each measurement device according to the schedule outlined below. The schedules for maintenance and calibrations are given in Tables B-1 and B-2.

Quality control checks are also conducted in the field for each test program. A partial list of checks made as part of each CEM system test series is included below as an example of the field QA procedures.

- Sample acquisition and conditioning system leak check.
- 3-point analyzer calibrations (all analyzers).
- Complete system calibration check ("dynamic calibration" through entire sample system).
- Periodic analyzer calibration checks are conducted at the start and end of each test run. Any change between pre- and post-test readings are recorded.
- All calibrations are conducted using EPA Protocol gases certified by the manufacturer.
- Calibration and CEM performance data are fully documented, and are included in each source test report.

**Chain of Custody.** MAQS maintains full chain of custody documentation on all samples and data sheets. In addition to normal documentation of changes between field sample custodians, laboratory personnel, and field test personnel, MAQS documents every individual who handles any test component in the field (e.g., probe wash, impinger loading and recovery, filter loading and recovery, etc.).

Samples are stored in a locked area to which only laboratory personnel have access. Neither other MAQS employees nor cleaning crews have keys to this area.

**Training.** Personnel training is essential to ensure quality testing. MAQS has formal and informal training programs which may include some or all of the following:

1. Attendance at EPA-sponsored training courses.
2. Enrollment in EPA correspondence courses.
3. A requirement for all technicians to read, understand, and sign MAQS's QA Manual.
4. In-house training and MAQS meetings on a regular basis.
5. Maintenance of training records.
6. Administration of internal qualified individual (QI) tests for all methods performed.
7. Participation in the Qualified Source Testing Individual (QSTI) program administered by the Source Evaluation Society (SES).

**Knowledge of Current Test Methods.** With the constant updating of standard test methods and the wide variety of emerging test methods, it is essential that any qualified source tester keep abreast of new developments. MAQS subscribes to services which provide updates on EPA reference methods, and on EPA and local agency rules and regulations. Additionally, source test personnel regularly attend and present papers at testing and emission-related seminars and conferences.

**Audit Program.** MAQS participates in the TNI Stationary Source Audit Sample (SSAS) audit program for all methods for which audit samples are available.

**Uncertainty of Results.** Both qualitative and quantitative factors contribute to field measurement uncertainty and should be taken into consideration when interpreting the results contained within this report. Whenever possible, MAQS personnel reduce the impact of these uncertainty factors through the use of approved and validated test methods. In addition, MAQS personnel perform routine instrument and equipment calibrations and ensure that the calibration standards, instruments, and equipment used during test events meet, at a minimum, test method specifications as well as the specifications of our Quality Manual and ASTM D 7036-04.

The limitations of the various methods, instruments, equipment, and materials utilized during this test have been reasonable considered, but the ultimate impact of the cumulative uncertainty of this project is not fully identified within the results of this report.

**TABLE B-1**  
**SAMPLING INSTRUMENTS AND**  
**EQUIPMENT CALIBRATION SCHEDULE**

Instrument Type	Frequency of Calibration	Standard of Comparison or Method of Calibration	Acceptance Limits
Orifice Meter(large)	12 months	Calibrated dry test meter	± 2% of volume measured
Dry Gas Meter	6 months or when repaired	Calibrated dry test meter	± 2% of volume measured
Critical Orifice	6 months	Calibrated dry test meter	± 0.5% of average K' Cp constant (+5%) over working range; difference between average Cp for each leg must be less than 2%
S-Type Pitot (for use with EPA-type sampling train)	6 months	EPA Method 2	≤ 1.0 in Hg difference
Vacuum Gauges	12 months	NSIT-traceable gauge	±4 F for <400 F
Temperature Measurement (thermocouples)	12 months	NBS mercury thermometer or NBS calibrated platinum RTD	± 1.5% for >400 F
Temperature Readout Devices	6 months	Thermocouple simulator	± 2% full scale reading
Analytical Balance	12 months (check prior to each use)	NIST-traceable weights	± 0.5 mg of stated weight
Probe Nozzles	12 months	Nozzle diameter check	Range <± 0.10 mm for micrometer three measurements
Continuous Analyzers	Every field day, Depends upon use, frequency and performance	As specified by manufacturers operating manuals, EPA NBS gases and/or reference methods	Satisfy all limits specified in operating specifications

**TABLE B-2**  
**EQUIPMENT MAINTENANCE SCHEDULE**  
**Based on Manufacturer's Specifications and MAQS's Experience**

Equipment	Performance Requirement	Maintenance Interval	Corrective Action
Pumps	1. Absence of leaks 2. Ability to draw manufacturer required vacuum and flow	6 months	1. Visual inspection 2. Clean 3. Replace worn parts 4. Leak check
Flow Measuring Device	1. Free mechanical movement 2. Absence of malfunction	6 months	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero, span gas	As required by the manufacturer	As recommended by manufacturer
Mobile Van Sampling Systems	Absence of leaks	Depends on nature of use	1. Change filters 2. Leak check 4. Check for system contamination
Sampling Lines	Sample degradation less than 2%	After each test or test series	Blow filtered air through line until dry



*American Association for Laboratory Accreditation*

## *Accredited Air Emission Testing Body*

A2LA has accredited

### **MONTROSE AIR QUALITY SERVICES**

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this organization is accredited to perform testing activities in compliance with ASTM D7036 - Standard Practice for Competence of Air Emission Testing Bodies.



Presented this 2<sup>nd</sup> day of February 2016

A handwritten signature in blue ink, appearing to read 'J. C. Bunt'.

Senior Director of Quality and Communications  
Certificate Number 3925.01  
Valid to February 28, 2018

*This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.*



# SOURCE EVALUATION SOCIETY



## Qualified Source Testing Individual

LET IT BE KNOWN THAT

**JOSEPH M. HEFFERNAN, III**

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED  
EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES  
ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

### **MANUAL GAS VOLUME MEASUREMENTS AND ISOKINETIC PARTICULATE SAMPLING METHODS**

ISSUED THIS 17<sup>TH</sup> DAY OF DECEMBER 2015 AND EFFECTIVE UNTIL DECEMBER 16<sup>TH</sup>, 2020



Peter R. Westlin, QSTI/QSTO Review Board



Peter S. Pakalnis, QSTI/QSTO Review Board



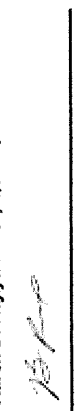
Theresa Lowe, QSTI/QSTO Review Board



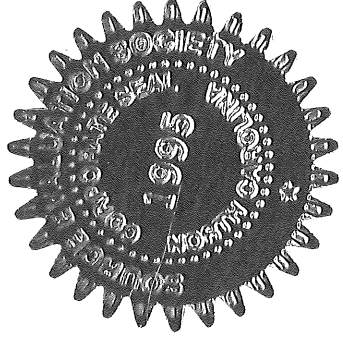
C. David Bagwell, QSTI/QSTO Review Board



Karen D. Kajiya-Mills, QSTI/QSTO Review Board



Bruce Randall, QSTI/QSTO Review Board



CERTIFICATE  
NO.

2009-325

# SOURCE EVALUATION SOCIETY



## Qualified Source Testing Individual

LET IT BE KNOWN THAT

**JOSEPH M. HEFFERNAN III**

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED  
EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES  
ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

### **GASEOUS POLLUTANTS INSTRUMENTAL SAMPLING METHODS**

ISSUED THIS 24<sup>TH</sup> DAY OF MARCH 2014 AND EFFECTIVE UNTIL MARCH 23<sup>RD</sup>, 2019



  
Peter R. Westlin, QSTI/QSTO Review Board

  
Peter S. Pakalnis, QSTI/QSTO Review Board

  
C. David Bagwell, QSTI/QSTO Review Board

  
Karen D. Kajiya-Mills, QSTI/QSTO Review Board

APPLICATION  
NO.  
2009-325

  
Glenn C. England, QSTI/QSTO Review Board

## **APPENDIX B**

### **JULY 13, 2017, EPA INFORMATION REQUEST**

**KAPSTONE  
LONGVIEW, WASHINGTON  
INFORMATION REQUEST**

**DEFINITIONS**

All terms used in this Information Request, including Attachments A and B, have their ordinary meaning unless such terms are defined below, elsewhere in this Information Request, in the Clean Air Act (CAA), 42 U.S.C. § 7401, or in 40 C.F.R. Parts 52, 60, or 63. For purposes of this Information Request:

1. “KapStone” means all employees and agents of Longview Fibre Paper and Packaging, Inc., d/b/a KapStone Paper Corporation, and its co-owners, parent corporations, and subsidiaries.
2. “Facility” means the Title V major source owned and operated by KapStone and located in Longview, Washington (at 300 Fibre Way).
3. “Ecology” means the Washington State Department of Ecology.
4. “Process Data” means, at a minimum, the following elements:
  - Sawdust mass feed rate (bone dry tons/hr) and wood species (percent);
  - Screw conveyor/metering screw rate in revolutions per minute (rpm);
  - Millwater into the screw conveyor/metering screw volumetric flow rate and temperature;
  - Cooking liquor (or any other substance added to the sawdust prior to the digester) volumetric or mass feed rate, as appropriate;
  - The following M&D Digester Inlet Valve parameters:
    - RPM;
    - Primary Exhaust (recycled) steam temperature and pressure;
    - Rotor pocket pre-purge steam temperature and pressure;
    - Rotor pocket purge steam temperature and pressure; and
    - Secondary exhaust temperature and pressure;
  - Digester production rate (tons of oven dried pulp (ODP)/hr);
  - Any other process parameter used by the Facility or testing firm in determining or calculating emission rates in all units of measure required by this Information Request.
5. “Sawdust Digester” means, for the purposes of this Information Request, the Messing and Durkee (M&D) No. 4 sawdust digester at the Facility.
6. “M&D Digester Inlet Valve” means the valve on the Sawdust Digester identified on page 4 of the slides labeled “M&D Digester Inlet Valve” of KapStone’s presentation to EPA on May 30, 2017, and provided to EPA via email on June 2, 2017.

**KAPSTONE  
LONGVIEW, WASHINGTON  
INFORMATION REQUEST**

**QUESTIONS**

1. **Methanol.** Within 90 days of receipt of this Information Request, KapStone must conduct, for the Sawdust Digester, a performance test simultaneously measuring the mass emission rate of total Hazardous Air Pollutants (HAP) as methanol<sup>1</sup> at each of the following locations as provided in Attachment A:
  - a. All lines or ducts from the M&D Digester Inlet Valve to cyclones or directly to atmosphere, including the “secondary exhaust” line. Testing must be conducted prior to any cyclone; and
  - b. All vent(s) to atmosphere which have connectivity with the screw conveyor/metering screw.<sup>2</sup>
2. **Total Reduced Sulfur (TRS).** Within 90 days of receipt of this Information Request, KapStone must conduct, for the Sawdust Digester, a performance test simultaneously measuring the emission rate of TRS at each of the following locations as provided in Attachment A:
  - a. All lines or ducts from the M&D Digester Inlet Calve to cyclones or directly to atmosphere, including the “secondary exhaust” line. Testing must be conducted prior to any cyclone; and
  - b. All vent(s) to atmosphere which have connectivity with the screw conveyor/metering screw.
3. **Advance Notification.** By no later than 30 days before any performance test required by Paragraphs 1 or 2 above is conducted, or unless EPA agrees in writing to some other time period, KapStone must provide notice of its intent to conduct such test to EPA and Ecology. This notification must include the scheduled date of the test, and a complete emissions test protocol/plan. If EPA requires any adjustment of the emissions test protocol/plan or operating conditions, EPA will notify KapStone within 30 days of receipt of the notice, and KapStone must make such adjustments and conduct the performance test in conformity with EPA's requirements. The emissions test protocol/plan must, at a minimum, include and address the following elements:
  - a. Purpose and scope of testing;
  - b. Source description, including a description of the operating scenarios and mode of operation during testing;
  - c. Schedule/dates of testing;
  - d. Process Data collected (as provided in Attachment A, all Process Data must be collected and reported at the frequency collected by the Facility, with a minimum frequency of at least one data point per hour; must cover the time period beginning 30 days prior to the

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<sup>1</sup> Under 40 C.F.R. § 63.457(f), total HAP concentration shall be measured as one of the following: (1) As the sum of all individual HAPs; or (2) As methanol.

<sup>2</sup> EPA observed three such vents to atmosphere during an on-site inspection on August 24, 2016.



- performance testing and continuing until five days after the testing is concluded; and must be reported with the date and time of collection);
  - e. Sampling and analysis procedures, specifically requesting approval for any proposed alternatives to the reference test methods, and addressing minimum test length and minimum sample volume;
  - f. Sampling location description and proposed means of compliance with the reference test methods;
  - g. Appropriate piping and instrumentation diagrams depicting all proposed testing locations with the precise proposed sample collection point marked;
  - h. Analysis procedures and laboratory identification;
  - i. Quality assurance plan including Data Quality Objectives;
  - j. Calibration procedures and frequency;
  - k. Sample recovery and field documentation;
  - l. Chain of custody procedures;
  - m. Quality Assurance (QA)/Quality Control (QC) project flow chart;
  - n. Data processing and reporting;
  - o. Description of data handling and QC procedures; and
  - p. Report content and timing.
4. Report of Results. Within 45 days after conducting a performance test required under Paragraphs 1 or 2 above, KapStone must submit to EPA and to Ecology a report documenting the results of the performance test that includes, at a minimum, the following information:
- a. General identification information for the Facility including a mailing address, the actual address, the owner or operator or responsible official (where they are applicable) or an appropriate representative and an email address for this person;
  - b. Identification of emission point/vent(s) being tested, performance test dates, pollutant(s) being measured, the units of the standard or the pollutant emissions units;
  - c. A brief process description;
  - d. A complete unit description, including a description of feed streams and control devices, the appropriate source classification code (SCC), and the permitted maximum process rate (where applicable);
  - e. Summary page including:
    - i. Emission results, expressed in units identified in Table 1 of Attachment A; and
    - ii. Discussion of errors or problems encountered, both real and apparent;
  - f. Sampling site description; description of sampling and analysis procedures and any modifications to standard procedures; and quality assurance procedures;
  - g. Record of operating conditions during the test, including operating parameters for which emissions are being measured; record of preparation of standards; and record of calibrations;
  - h. Process Data collected (as provided in Attachment A, all Process Data must be collected and reported at the frequency collected by the Facility, with a minimum frequency of at least one data point per hour; must cover the time period beginning 30 days prior to the performance testing and continuing until five days after the testing is concluded; and must be reported with the date and time of collection);
  - i. Raw data sheets for field sampling;
  - j. Raw data sheets for field and laboratory analyses;
  - k. Chain-of-custody documentation;
  - l. Explanation of laboratory data qualifiers;

- m. Documentation of the determination of Method Detection Limit;
  - n. Example calculations of all applicable stack gas parameters, emission rates, percent reduction rates, and analytical results, as applicable. The report must include a description of all assumptions made in conducting the calculations and the basis for all data used in the calculations. Sufficient detail must be provided to enable EPA to duplicate the calculations using basic input data. In particular, this level of detail must be provided for calculations performed in determining emission rates measured during testing;
  - o. Identification information for the company conducting the performance test including a contact person and his/her email address; and
  - p. Any other information required by the test method, a relevant standard, or the EPA.
5. Additional Information. Concurrently with the submission of the last performance test report required to be submitted under this Information Request, provide:
- a. The dates and results of all tests not previously provided in response to this Information Request that evaluated either the TRS content or methanol concentration of emissions from the Sawdust Digester, any rotary valve on the Sawdust Digester, or any other portion of the sawdust feed system associated with the Sawdust Digester, including but not limited to the vent(s) identified in Paragraphs 1 or 2 above; and
  - b. The date of the most recent rebuild or significant maintenance of the M&D digester inlet valve to ensure the spacing between the valve vanes/rotors and the valve casing meets applicable specifications.

**ATTACHMENT A****Performance Testing Procedures and Methods for the Information Request for  
KapStone, Longview, Washington**

The Information Request requires emissions and other test data for multiple pollutants. Please refer to the Information Request for additional testing information, including the specific locations and pollutants to be tested at the Facility.

**1.1 How to Select Sample Location**

KapStone must use EPA Method 1 of Appendix A of 40 C.F.R. Part 60 to select the precise locations in the ducting at the emission points/vents specified by EPA in Paragraphs 1 and 2 of the Information Request-Questions, as well as the number of traverse points for sampling except as otherwise specified in section 1.2 and Table 1 below. If the physical configuration of the ducting at the sampling points specified by EPA precludes sampling in accordance with Method 1 criteria, KapStone must describe any deviations from Method 1 in the test protocol and provide supporting reasoning. See <https://www.epa.gov/emc/method-1-sample-velocity-traverses> for a copy of the method and guidance information for sampling situations not meeting Method 1 criteria.

**1.2 Test Methods and Reporting**

Table 1 presents a summary of the required test methods for each pollutant. For copies of the U.S. EPA methods, Performance Specifications (if applicable) and additional information, please refer to EPA's Emission Measurement Center website: <https://www.epa.gov/emc>.

KapStone must use the limit of detection (LOD), also known and referred to here as the method detection limit (MDL) determination procedure, in EPA Method 301, Section 15 to develop the MDL. The MDL must be determined in the same matrix as the samples that will be analyzed.

Each test must include a minimum of three valid test runs for each target pollutant at each sampling location specified in the Information Request.

Each Sawdust Digester and associated equipment being tested must be operated during testing under conditions that are representative of normal production and operation.

All pollutant concentrations must be reported on a dry moisture basis at standard conditions. The recommended units of concentration for each pollutant vary, and are listed in Table 1. Results of the performance tests must be reported as provided in Paragraph 4 of the Information Request-Questions.



In addition to the emission test data, KapStone must also collect and report the Process Data covering the time period beginning 30 days prior to the performance testing and continuing until five days after the testing is concluded. All Process Data must be at the frequency collected by KapStone, with a minimum frequency of at least one data point per hour and with the date and time of collection. The correlation between emissions measurements and Process Data (e.g., identify Method 16, run 1 for the associated Process Data) must be made clear in the Report.

Table 1 lists the pollutants and associated methods for testing KapStone's Sawdust Digester.

**Table 1: KapStone's Sawdust Digester– Pollutants and Test Methods**

<b>Location/Pollutant<sup>1</sup></b>	<b>Test/Analysis Method</b>	<b>Comments</b>	<b>Units of Measure</b>
<b>All lines or ducts from the M&amp;D Digester Inlet Valve to cyclones or directly to atmosphere, including the “secondary exhaust” line. Testing must be conducted prior to any cyclone; and All vent(s) to atmosphere which have connectivity with the screw conveyor/metering screw.<sup>2</sup></b>	EPA Method 308	Collect a minimum volume of 60 liters per run. Remove the silica gel sorbent tube prior to the final system leak check required in 8.1.3. Samples must be shipped on ice and arrive at lab < 20 deg. C.	ppmdv, lb/hr, lb/ton of ODP
	EPA Method 16	Conduct a minimum of 16 injections per test run over not less than three hours and no more than six hours.	ppmdv, uncorrected for oxygen content, lb/hr, lb/ton of ODP
	EPA Methods 1 & 2	Conduct a flow traverse for duct velocity calculation.	dscf/hr
Methanol, TRS, flow rate, moisture	EPA Method 4	Collect a minimum volume of 21 dscf at 0.75 cfm.	% H2O

See Attachment B for information on how to calculate and report values measured below MDLs.

<sup>1</sup> See page 4, slides labeled “M&D Digester Inlet Valve” of KapStone's presentation presented to EPA on May 30, 2017, and provided via email on June 2, 2017.

<sup>2</sup> EPA observed three such vents to atmosphere during an on-site inspection on August 24, 2016.

## ATTACHMENT B

### **Calculating and Reporting Values Measured Below Method Detection Levels (MDL)**

- Identify the status of measured values relative to detection levels on the performance test report using the following descriptions:
  - **BDL** (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).
  - **DLL** (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).
  - **ADL** (above detection level) – all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).
- For reporting and calculating individual test run data KapStone must use a scientifically acceptable approach to develop the method detection limit. The MDL must be determined in the same matrix as the samples that will be analyzed. Use the MDL determination procedure in EPA Method 301, Section 15. For analytical data reported from the laboratory as "nondetect" or "below detection level:"
  - Include a brief description of the procedures used to determine the analytical detection and in-stack detection levels;
  - Describe these procedures completely in the full test report including the measurements made, the standards used, and the statistical procedures applied;
  - Calculate the in-stack emissions rate for any analytical result reported as below detection level using the relevant analytical detection level as the reported value. **Note that the analytical detection level used in this calculation is not the analytical reporting level many laboratories provide. The analytical detection level is most often defined as the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the value is above zero.<sup>3</sup> The analytical reporting level is often an arbitrary multiplication of the method detection level;**
  - Report the calculated emissions concentration or rate result as a bracketed "less than" detection level value (e.g., [ $<0.0105$ ]); and
  - Report as numerical values (i.e., no brackets or  $<$  symbol) any analytical data measured above the detection limit including any data between the analytical detection level and a laboratory-specific reporting or quantification level (i.e., flag as ADL, see below).

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<sup>3</sup> SW 846 Method 8000D, Determinative Chromatographic Separations, <https://www.epa.gov/hw-sw846/sw-846-test-method-8000d-determinative-chromatographic-separations>

- For pollutant measurements composed of multiple components or fractions (e.g., mercury and other metals sampling trains) when the result for the value for any component is measured below the analytical detection level:
  - Calculate in-stack emissions rate or concentrations as outlined above for each component or fraction;
  - Sum the measured and detection level values as outlined above using the in-stack emissions rate or concentrations for all of the components or fractions; and
  - Report the sum of all components or fractions as a bracketed “less than” detection level value (e.g., [ $<0.0105$ ]);
  - Report also the individual component or fraction values for each run.
  
- For measurements conducted using instrumental test methods (e.g., Methods 3A, 6C, 7E, 10, 25A):
  - Record gaseous concentration values **as measured** including negative values and flag as ADL; do not report as BDL;
  - Calculate and report in-stack emissions rates using these measured values; and
  - Include relevant information relative to calibration gas values or other technical qualifiers for measured values as discussion in your test report.
  
- For reporting and calculating average emissions rate or concentration for a test when some results are reported as BDL:
  - Sum all of the test run values including those indicated as BDL or DLL as numerical values; and
  - Calculate the average emissions rate or concentration (e.g., divide the sum by three for a three-run test). Report the average emissions rate or concentration average.

## **APPENDIX C**

### **FIELD SAFETY PLAN**

# **FIELD WORK SAFETY PLAN**

## **Table of Contents:**

1.0	Project Personnel Responsibilities
2.0	Training Requirements
3.0	Personal Protective Equipment
4.0	Emergency Response
5.0	Hearing Conservation
6.0	Hazardous Material and Chemical Use and Safety Guidelines
7.0	Housekeeping
8.0	First Aid
9.0	Fire Protection and Prevention
10.0	Confined Space
11.0	Respiratory Protection
12.0	Hand and Power Tool Use and Inspection
13.0	Electrical Safety
14.0	Fall Protection and Manlift Operation
15.0	Traffic
16.0	Job Site Hazard Identification
16.1	Physical and Health Hazards
16.2	General
16.3	Plant Equipment
16.4	Sun, Heat and Cold
17.0	Documentation
18.0	Attachments
18.1	Potential Refinery Hazards
18.2	OSHA Fact Sheet: Asbestos

## **1.0 Project Personnel Responsibilities**

The on-site project manager, or test team leader, is responsible for generating, organizing and compiling this field work safety plan. The project manager is responsible for assuring that adequate training and safety briefing(s) for the activity are provided to those performing the field work. The project supervisor has provided a copy of this field work safety plan and has explained it to each member of the project team prior to field activities.

All test team members are responsible for following the field work safety plan. The test team's safety responsibilities include:

1. Following the field work safety plan.
2. Reporting any unsafe conditions or practices to the project manager.
3. Reporting to the project manager all facts pertaining to incidents which result in injury.
4. Reporting all equipment malfunctions or deficiencies to the project manager and the equipment supplier.
5. Meeting with plant safety personnel and following their site-specific emergency procedures and contractor safety programs.
6. Stop Work Policy – Enforce the stop work policy for any MAQS operations that threaten the health and safety of the team.

The project manager has the on-site responsibility for ensuring that all team members comply with the field work safety plan. It is the project manager's responsibility to inform all other field personnel of physical and chemical hazards prior to starting work. The project supervisor's responsibilities also include:

1. Providing daily safety briefings for team members and visitors.
2. Updating equipment or procedures to be used at the facility based on any new information gathered at the site.
3. Inspecting all personal protective equipment (PPE) prior to use.
4. Documenting compliance with field work safety plan by completing forms used by MAQS.
5. Posting location and route to the nearest medical facility; arranging for emergency transportation to the nearest medical facility.
6. Posting emergency communications procedures.
7. Following all procedures for reporting unsafe conditions and practices.
8. Observing team members for signs of exposure, stress, or other conditions relating to physical conditions and/or work activities.
9. Maintaining site compliance in regards to all client and MAQS safety programs (i.e. Hazard Communication, PPE, Emergency Response, Hearing Conservation, Respiratory Protection, and hazardous substance use and safety)
10. Providing to all necessary personnel and agencies, upon request, copies of MAQS written safety plans and documentation of employee training.

The project manager is responsible for reviewing and approving the draft field work safety plan for accuracy and incorporating new information or guidelines which aid the project manager or project supervisor in further definition and control of health and safety hazards associated with the project.

## **2.0 Training Requirements**

Each employee will be familiar with the requirements of this field work safety plan and will participate in site activity and safety briefings and orientation.

All MAQS employees will have the following training completed as required to maintain both safety compliance and project safety:

Project Managers, Test Team Leaders and Field Technicians

- a. Hazard Communication,
- b. Emergency Response and Emergency Action Plan Training,
- c. Hearing Conservation,
- d. Respiratory Protection,
- e. Fall protection (including man-lift certification),
- f. Contractor Electrical Safety,
- g. PPE,
- h. Hand Power Tool Use/Safety,
- i. Ladder and Stairway Safety,
- j. Lifting and Back Safety,
- k. Lock Out/Tag Out Awareness,
- l. Confined Space Awareness,
- m. Fire Prevention and Protection,
- n. Behavior Based Safety, and
- o. First Aid/CPR Safety training

## **3.0 Personal Protective Equipment**

In addition to MAQS field personnel dress code which includes the wearing of *long sleeved shirts* while at job sites, MAQS minimum required personal protective equipment for all employees on-site at all MAQS project sites includes:

- Hardhats,
- Steel toe work shoes (ANSI rated with leather tops),
- Safety glasses,
- Leather gloves, and
- Hearing protection (double hearing protection may be required at some sites)

Additional PPE may be required as needed to maintain both safety compliance and personal safety. These may include:

- Hot gloves,
- Fall protection safety harness,
- Chemical resistant gloves,
- Chemical resistant goggles with splash protection,
- Chemical resistant suit or apron (MINOR HAZMAT SPILL CLEAN UP ONLY),
- Heat shield and or heat protection suit with mask,
- Respirator, or
- N95 dust mask

Once an employee has successfully completed the training on the proper use, maintenance, and inspection of PPE, it is that employee's responsibility to ensure that his or her PPE is in proper working order.

#### **4.0 Emergency Response**

In the event of a plant emergency (i.e. fire, explosion, chemical release, medical emergency, etc) MAQS personnel are to follow the client's emergency procedures. Additional MAQS procedures may be followed but are secondary to the client's procedures.

MAQS trains and equips their employees to handle many hazards that may occur on-site. MAQS employees may assist in emergency procedures but are ultimately responsible for only MAQS personnel, equipment, and materials. This includes chemicals and samples.

#### **5.0 Hearing Conservation**

All MAQS personnel will follow MAQS program for hearing conservation. In the event that a client's site requires more stringent protection, MAQS personnel will adhere to the clients hearing conservation program.

A copy of this program must be made available to all employees, clients, and/or OSHA inspectors upon request.

#### **6.0 Hazardous Material and Chemical Use and Safety Guidelines**

MAQS may use various compressed gases and chemicals in small quantities throughout testing.

MAQS will be operating under Materials of Trade guidelines for the transportation of these chemicals. All chemicals used by MAQS employees are the sole property of MAQS and are not for sale under any circumstance.



MAQS employees are to strictly follow MAQS written Hazard Communications Program. All personnel will be required to follow proper procedure for labeling and use of hazardous materials and chemicals. This program contains MAQS chemical labeling procedures, SDS information, and chemical list. The project team may use a number of hazardous chemicals during the sampling and analyses of samples. Team members shall follow all safety procedures required in the sampling and analysis methods. Employees shall wear protective eyewear and protective gloves during sampling and during analysis. If splashed with chemicals, the affected areas shall be immediately rinsed in clean water or chemical rinse solution for a minimum of 15 minutes using an ANSI approved rinse device. Eye wash and chemical rinse stations will be available in the mobile laboratory. Medical attention shall be sought as necessary based on the exposure. Staff shall seek medical attention if there is any contact of chemicals with the eyes.

MAQS will not be generating any hazardous waste during the normal course of testing.

Copies of these programs must be made available to all employees, clients, and/or OSHA inspectors upon request. SDSs are kept on-board every mobile laboratory and are made available to anyone.

## **7.0 Housekeeping**

All areas in and around testing will be kept clear of debris and refuse. All materials and equipment will be organized to limit tripping hazards.

## **8.0 First Aid**

All mobile laboratories will have a stocked and maintained OSHA approved first aid kits on board. These kits will contain basic items to treat only minor cuts, scrapes, and burns. If more than basic first aid is required, medical attention from a certified or trained person will be required.

All MAQS employees are trained in First Aid and CPR. It is the role of the acting on-site supervisor to ensure proper First Aid is given to all injured MAQS employees on-site within the confines of their training and to activate Emergency Medical Response if any injury needs medical treatment beyond what can be provided within the confines of their training. First Aid trained personnel employed by MAQS are only responsible to give First Aid to MAQS employees.

Each employee will be made aware of the location and the contents of first aid kits brought on-site.

A copy of this program must be made available to all employees, clients, and/or OSHA inspectors upon request.

## **9.0 Fire Protection and Prevention**

MAQS maintains ABC type fire extinguishers on-board all vehicles. MAQS recognizes that some client's process may be damaged by the use of any "A" type fire extinguisher. In the event that any fire extinguisher must be brought on-site by MAQS the Project Manager or Test Team Leader will ensure that only "B/C" type extinguishers are brought on-site.

All employees are required to follow plant procedures in regards to open flames and smoking. It is the responsibility of the plant to notify the test team of potential flame and fire hazards. In the event that the test requires the use of a flame (i.e. Flame Ionization Detection), the test team leader will be responsible for notifying the plant and following the plant's instructions for safely completing the test.

A copy of this program must be made available to all employees, clients, and/or OSHA inspectors upon request.

## **10.0 Confined Space**

No MAQS employee is required or will be required to enter any confined spaces.

All MAQS employees will have awareness level training designed for avoiding confined spaces.

## **11.0 Respiratory Protection**

MAQS maintains a Respiratory Protection Program. All aspects of respiratory protection will be done by following this plan. Under no circumstances will any MAQS employee perform any work that exceeds the limitations of this plan.

A copy of this program must be made available to all employees, clients, and/or OSHA inspectors upon request.

## **12.0 Hand and Power Tool Use and Inspection**

MAQS does not use any power tools in the course of testing.

All hand tools will be inspected by the user prior to use for signs of excessive wear and condition (rust, burrs, function ability, etc). All tools that are not fit for use will be removed from use, labeled, and replaced.

A copy of this program must be made available to all employees, clients, and/or OSHA inspectors upon request.

### **13.0 Electrical Safety**

All MAQS employees are trained to follow MAQS, Contractor Electrical Safety Plan.

MAQS utilizes many **NON-INTRINSICALLY SAFE EQUIPMENT** (i.e. Flame Ionization Detectors, meter boxes, etc.) in the course of normal testing. MAQS will notify the plant/company contact prior to powering equipment to ensure that plant safety precautions regarding use of non-intrinsically safe equipment are adhered to.

Employees are to never open panels, junction boxes, or other devices related to the plant power system. If it is necessary to have a device opened, a trained plant person is required to perform all necessary work. Lockout/tag out procedures are to be followed at all times. Observe all appropriate electrical safety procedures when working with electrical equipment of any voltage. Do not handle any exposed electrical conduit, wire, or conductor. Do not disturb any electrical transformer fluids. Avoid wet floors when performing any electrical work.

A copy of this program must be made available to all employees, clients, and/or OSHA inspectors upon request.

All MAQS employees are Lock Out/Tag Out aware only. If further Lock Out/Tag Out training is required for testing, either appropriate training will be done prior to showing up on-site or a qualified person will perform on-site training. Whichever meets the requirements of the job.

MAQS does not own, operate or work on any “energized equipment.”

### **14.0 Fall Protection and Manlift Operation**

All MAQS employees are trained to follow MAQS, Fall Protection Plan.

A copy of this program must be made available to all employees, clients, and/or OSHA inspectors upon request.

### **15.0 Traffic**

MAQS has established a Driving Safety Program to ensure that all company vehicles are driven and maintained in a safe and healthy manner. Only those employees who have been accepted by MAQS’s automobile insurance company are authorized to drive a motor vehicle on the behalf of the company in the course and scope of work or operate a company owned vehicle. The program is intended to prevent employee injuries and to minimize MAQS’s exposure to loss. The primary goals of the program are as follows:

- To require that all employees driving on behalf of MAQS drivers must maintain both a current valid motor vehicle license and acceptable driving records.
- To train employees in safe driving practices.

MAQS employees who drive a company or company rented vehicle or who drive a personal or rented vehicle on behalf of MAQS must follow general safety controls.

- All drivers and passengers must wear seatbelts.
- Always operate the vehicle in a safe manner.
- Drivers must always use vehicles of the correct size and for the intended use.
- Drivers must always secure all loads and do not exceed the manufacturer's specifications and legal limits for the vehicle.
- Never drive if your vision, hearing, or alertness is impaired due to fatigue, illness, or any other cause. In such instances, MAQS encourages the use of alternative forms of transportation.
- Never drive while under the influence of alcohol, illegal drugs, prescriptions, or over-the-counter medications that might impair their driving skills.
- Drivers must refrain from using cellular or other communication devices, personal listening devices, and from conducting any other activities which may impede the driver's ability to focus on safely operating the vehicle while it is in motion.
- Writing, sending, or reading text-based communication, including text messaging, instant messaging, operating applications, and e-mail, on a wireless device or cellular phone while driving is prohibited.
- Always drive within the speed limit. (No driver will be required to meet a schedule that would necessitate exceeding the speed limit.)
- Always obey all traffic laws, ordinances, traffic signals, and road signs.

To avoid hazards associated with traffic, employees should be aware of traffic movement at all times and are required to follow all plant safety procedures regarding traffic safety.

## **16.0 Job Site Hazard Identification**

The potential hazards to personnel working at the subject site have been identified as physical hazards of working around equipment (mechanical and electrical equipment, temporary power lines/cables, noise), slips/falls, fatigue, heat stress, and exposure to chemicals. Each potential hazard is described below. Note: this is not an all-inclusive list. Some sites may have additional hazards, which will be included in as an attachment. See attachment 18.1 "Potential Refinery Hazards."

Some work sites may have specific hazards, such as the possibility of exposure to equipment which incorporates the use of asbestos, or exposure to specific hazardous chemicals which approach the OSHA or NIOSH permissible exposure limits.<sup>1</sup> In general, we do not expect to be exposed to these health hazards. If the hazards do exist at particular work sites, it will be the client's responsibility to provide affected MAQS employees training so that they can complete their tasks safely.

## **16.1 Physical and Health Hazards**

The physical and health hazards can include traffic, working near heavy equipment, working near automatic equipment, temporary and permanent power lines, overhead hazards, pulling and lifting of equipment, slips and falls, climbing and elevated work, chemical exposure, above ground temporary piping, noise, and heat exposure.

## **16.2 General**

Employees must use common sense and follow identified safety procedures when performing field work. Employees are not to climb over or remove any protective barriers unless trained and authorized to do so and proper safety procedures have been implemented. All employees can refuse to perform any field work if they feel they are overly tired, nauseous and/or fatigued to the point that test team and personal safety is at risk. Extreme care must be used when climbing ladders and working on access platforms. Employees must watch and pay careful attention to where they are walking. Employees are to be aware of wet areas and other slip hazards, as they are very common to our everyday activities. There shall be no running.

## **16.3 Plant Equipment**

Employees should be aware of moving parts, which could cause injury when working near equipment. Watch for rotating equipment hazards. Employees are not to remove any guards or protective barriers. Noise levels can be high near operating equipment; hearing protection is to be worn on site at all times.

## 16.4 Sun, Heat and Cold

Other physical hazards include heat stress or cold stress depending on what the weather is like when the work takes place.

### **Heat Illness Prevention CA OSHA Regulation, Title 8 Section 3395**

Applies to all outdoor places of employment.

#### **Training**

Training must be provided to all supervisory and non-supervisory employees in:

- Identifying, evaluating and controlling exposures & symptoms.
- The importance of acclimatization
- Company procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.
- Company procedures for ensuring that, in the event of emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders.
- Control measures
- The importance of drinking water
- Risk factors
- Emergency procedures
- Employee rights
- Employer responsibility
- **Supervisors must be trained in heat related illness prior to supervision of employees working in the heat. Including procedures to prevent heat illness and procedures to follow when an employee shows symptoms of heat illness.**

#### **Environmental factors**

- Working conditions where the possibility of heat illness could occur
- Working in direct sunlight
- Ambient temperature 80° or above
- Required PPE
- Humidity
- Workload and duration

**Risk Factors**

- Unaccustomed to working in heat
- Physical exertion-work at a steady pace-avoid over exertion
- Medications
- Wearing PPE that traps body heat
- Physical fitness
- Age-older people may have less body water and lower sweat efficiency
- Lack of water consumption

**Water**

- Employers are required to provide access to potable drinking water in sufficient quantity at the beginning of the work shift.
- Provide 1 quart per employee per hour per shift
- 1 quart x 8 hrs. = 2 Gallons for every employee/day

**Shade**

- At or below 80 degrees Fahrenheit the employee shall have timely access to shade upon request. For temperatures at or above 80 degrees Fahrenheit, one or more areas with shade shall be provided at all times while employees are present. Shade shall accommodate at least 25% of employees on shift at any one time.
- Employees “suffering from heat illness or believing a preventative recovery period is needed shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than five minutes.”
- Encourage employees to have a rest break.

**FIND SHADE!**

- “Shade” means blockage of direct sunlight.
- Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool.
- A vehicle is to be used to provide shade only if the AC is on, so it can be used to cool the body.

**High-Heat Procedures**

- Employer shall implement high-heat procedures when the temperature equals or exceeds 95° F.
- Supervisors must
  - Ensure effective communication is maintained.
  - Observe employees for alertness and signs or symptoms of heat illness.
  - Remind employees throughout the work shift to drink plenty of water.
  - Maintain close supervision of a new employee for the first 14 days.

**Heat Stress**

- Occurs when the total heat load on the body exceeds the body's capacity to cool itself.
- Can result in fatigue, skin rashes, and decreased mental alertness that can be a contributor to poor judgment and accidents
- If not prevented, results in heat stress illnesses. Two critical illnesses, if not recognized and treated immediately, can become life threatening. These are heat exhaustion and heat stroke.

**Heat Cramps**

- Heat cramps occurs when the body loses too much salt
- What to do
  - DRINK WATER
  - Replace salt or potassium by drinking electrolyte solutions such as sports drinks eating potassium-rich foods like bananas.



### **Heat Exhaustion**

- Heat exhaustion – the body can't replace fluids/salt lost in sweating
- **The signs and symptoms of heat exhaustion are:**
  - Headache
  - Dizziness
  - Nausea
  - Weakness
  - Fainting
  - Profuse sweating
  - Loss of appetite
  - Dilated pupils
  - Weak and rapid pulse
  - Shallow and rapid breathing
  - Possible cramps in abdomen and extremities
  - Possible vomiting
  - Difficulty walking
  - Cool and sweaty skin to the touch pale to ashen gray coloring.

### **First Aid for Heat Exhaustion is as follows**

- Immediately remove victim to the support area, or if you are the victim proceed to the support area.
- It is important to report to your supervisor any symptoms or signs of heat illness in yourself or your co-workers.
- Start cooling but be careful not to cause a chill (i.e., rest in shade and apply wet towel to forehead; open up and/or remove clothing as much as practical)
- Elevate feet 8-12 inches
- Drink cool water slowly, but only if conscious and not in shock
- If vomiting, and/or the signs and symptoms are not lessening within an hour, **call 911 or the local emergency number** for emergency help and/or transport the victim to emergency room.
- It is likely that a heat exhaustion victim will be unable to work for the remainder of the day.

## **Heat Stroke – DANGER**

- Heat Stroke – the body no longer sweats and holds so much heat that the body temperature reaches dangerous levels.
- Heat stroke is an immediate, life-threatening condition that results because the body's heat regulating mechanisms shut down and the body cannot cool itself sufficiently. As heat is excessively stored in the body, brain damage can result causing permanent disability or death
- Can lead to delirium, convulsions, unconsciousness and death.
- **The signs and symptoms of heat stroke are:**
  - hot, dry skin to the touch
  - reddish coloring
  - body temperature >105 degrees F
  - no sweating
  - mental confusion
  - deep, rapid breathing that sounds like snoring progressing to shallow, weak breathing
  - headache
  - dizziness
  - nausea
  - vomiting
  - weakness
  - dry mouth
  - convulsions
  - muscular twitching
  - sudden collapse
  - possible unconsciousness

**Heatstroke is a life-threatening situation. If you suspect someone is suffering from heatstroke, call 9-1-1 or the local emergency number immediately.**

**First aid for heat stroke is as follows:**

- Move the person to a cool place
- Loosen tight clothing
- Remove perspiration soaked clothing
- Apply cool, wet cloths to the skin.
- Fan the person
- If conscious, give small amounts of cool water to drink.
- Place the person on his or her side
- Continue to cool the person by using ice or cold packs on the wrists, ankles, groin, neck and in the armpits.
- Continue to check breathing and circulation.

**Review Control Measures at Tailgate Meetings**

- Ensure that there is at least 2 gallons of water for each employee for each 8 hour shift.
- Point out areas that may provide shade at your work site.
- Include on JHA
- Include work/rest cycles so that rest periods are taken before excessive fatigue occurs.
- Heat prevention procedures shall be in writing and made available to employees.
- Discuss how employees will call for help.

**DRINK WATER!!**

- Drink water before and during work in the heat.
- Avoid alcohol and caffeine.
- Plain water, served cool, is excellent. An adequate supply of potable water and drinking cups will be readily available, to provide water during rest periods.

Each workday you start out by putting on your PPE

- Hard Hat
- Safety glasses or Safety goggles
- Steel Toed Boots
- Gloves
- Ear Plugs
- Long sleeved shirts – Dress code

### **CDC Recommends**

- Use sunscreen with a sun protective factor (SPF) 15 or higher, and both UVA and UVB protection.
- Wear clothing to protect exposed skin
- Wear a hat with a wide brim to shade the face, head, ears and neck.
- Wear sunglasses that wrap around and block as close to 100% of both UVA and UVB rays as possible.
- Seek shade, especially during midday hours.
- **EVERYBODY IS AT RISK FOR SKIN CANCER**

### **Cold Stress**

The potential for cold stress is a particular concern when field activities are performed while air temperatures at the site are below 40 degrees F. Limit exposure to outside work during temperature and wind chill extremes and use the correct PPE for any outside work.

#### **Environmental Factors**

- Working outside during temperature and wind chill extremes
- Not wearing the required appropriate PPE.
- Pay special attention to protection of the face, head, hands, wrists and feet.

#### **Risk Factors**

- Unaccustomed to working in extreme cold.
- Medications.
- Drugs such as nicotine or caffeine because of their diuretic circulatory effects can increase susceptibility to cold.
- Workers with cold or flu or certain diseases, such as diabetes, heart, vascular, and thyroid problems may be more susceptible to the winter elements.
- Becoming exhausted or immobilized, especially due to injury can speed up the effects of the cold weather.

### **Hypothermia**

Hypothermia is the lowering of the body core temperature to the point where it is no longer functioning properly.

Symptoms include:

- Intense shivering.
- Poor coordination, stumbling.
- Loss of memory.
- Thickness of speech and drowsiness.

Hypothermia is insidious, and left untreated, may result in collapse and death.

## **Dehydration**

Dehydration, or the loss of body fluids, occurs gradually in the cold environment and may increase the susceptibility of workers to cold injury due to a significant change in blood flow to the extremities.

- Warm, sweet drinks and soups should be taken to the work site to provide caloric intake and fluid volume.
- Taking certain medication or drugs such as nicotine, or caffeine because of their diuretic circulatory effects can increase susceptibility to cold.

## **Treatment**

Prevent further heat loss, contact emergency services, and transport as soon as possible as directed to a medical facility.

## **Frostbite**

Frostbite is the freezing of body tissue. It may range from minor injury (“frost nip”) to complete freezing of an extremity. Untreated frostbitten areas will first become reddened and then become gray or white, particularly on exposed ear lobes, cheeks, or nose. Left untreated, the skin becomes numb and dead white. Watch co-workers for signs of frostbite.

## **Treatment**

Transport as soon as possible to a medical facility.

## **17.0 Documentation**

All documentation will be made available to all employees, clients, and/or OSHA inspectors upon request. This documentation includes daily site safety meetings, training records, training tests, and written plans.

## **18.0 Attachments**

## **18.1 Potential Refinery Hazards**

### **POTENTIAL REFINERY HAZARDS**

MAQS performs source testing at refineries such as the ConocoPhillips refinery in Rodeo, CA and the Martinez Refining Company (previously known as the Shell refinery) in Martinez, CA. There are certain health hazards specific to refineries that our employees should be aware of.

Asbestos was used in the construction of the refineries before its use was banned. Attached is an OSHA fact sheet which contains information regarding the health hazards associated with exposure to asbestos particles. Due to the nature of our work, we do not believe our employees will ever be exposed to asbestos at refineries.

Additional health hazards specific to refineries are exposure to benzene, cadmium, lead, and hydrogen sulfide which are all either produced by or used in petroleum refining operations. The permissible exposure limit (PEL) for benzene in air is 1 ppm based on a time-weighted average during an 8 hour work day. We do not expect to work in areas where the concentration of benzene approaches this PEL. We also do not expect to work in areas which contain significant amounts of liquid benzene.

Exposure to cadmium usually results from working around processes in which cadmium-laden ores are processed. The primary exposure pathway for cadmium is by breathing air which is contaminated with cadmium dust. Cadmium is particularly toxic with a PEL of 5 micrograms per cubic meter. We do not expect to work in areas where this concentration of cadmium is present.

Lead exposure can occur via exposure to breathing air contaminated with lead and by contact through the skin with liquids which contain lead. The PEL for airborne lead is 50 micrograms per cubic meter. We do not expect to work in areas where this concentration of lead is present. We also do not expect to work in areas where exposure to liquids containing lead is a possibility.

Hydrogen sulfide is a byproduct of refinery operations. The NIOSH PEL based on a ten minute time-weighted average is 10 ppm. Exposure to air with a concentration of 100 ppm can be fatal. We do not expect to work in areas where the concentration of hydrogen sulfide approaches the PEL.

It is our policy to ascertain from our refinery clients whether exposure to asbestos, cadmium, lead, and hydrogen sulfide at levels approaching the permissible exposure limits will be likely. If, in the unlikely event that we will be working in an area of the refinery where exposure to these particular health hazards is a possibility, it will be the client's responsibility to provide the affected MAQS employees training so that they can complete their tasks safely.

## **DANGER**

**ASBESTOS  
CANCER AND LUNG  
DISEASE HAZARD  
AUTHORIZED  
PERSONNEL ONLY  
RESPIRATORS AND  
PROTECTIVE  
CLOTHING ARE  
REQUIRED IN THIS  
AREA**

# Asbestos

# OSHA FACT Sheet

## **What is asbestos?**

Asbestos is the name given to a group of naturally occurring minerals used in certain products, such as building materials and vehicle brakes, to resist heat and corrosion. Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these materials that have been chemically treated and/or altered.

## **What are the dangers of asbestos exposure to workers?**

The inhalation of asbestos fibers by workers can cause serious diseases of the lungs and other organs that may not appear until years after the exposure has occurred. For instance, asbestosis can cause a buildup of scar-like tissue in the lungs and result in loss of lung function that often progresses to disability and death. Asbestos fibers associated with these health risks are too small to be seen with the naked eye, and smokers are at higher risk of developing some asbestos-related diseases.

## **Are you being exposed to asbestos?**

General industry employees may be exposed to asbestos during the manufacture of asbestos-containing products or when performing brake and clutch repairs. In the construction industry, exposure occurs when workers disturb asbestos-containing materials during the renovation or demolition of buildings. Employees in the maritime environment also may be exposed when renovating or demolishing ships constructed with asbestos-containing materials. In addition, custodial workers may be exposed through contact with deteriorating asbestos-containing materials in buildings.

## **Are there any OSHA standards that cover workers exposed to asbestos?**

Yes. The Occupational Safety and Health Administration (OSHA) has the following three standards to protect workers from exposure to asbestos in the workplace:

- 29 CFR 1926.1101 covers construction work, including alteration, repair, renovation, and demolition of structures containing asbestos.
- 29 CFR 1915.1001 covers asbestos exposure during work in shipyards.
- 29 CFR 1910.1001 applies to asbestos exposure in general industry, such as exposure during brake and clutch repair, custodial work, and manufacture of asbestos-containing products.

The standards for the construction and shipyard industries classify the hazards of asbestos work activities and prescribe particular requirements for each classification:

- Class I is the most potentially hazardous class of asbestos jobs and involves the removal of thermal system insulation and sprayed-on or troweled-on surfacing asbestos-containing materials or presumed asbestos-containing materials.
- Class II includes the removal of other types of asbestos-containing materials that are not thermal system insulation, such as resilient flooring and roofing materials containing asbestos.
- Class III focuses on repair and maintenance operations where asbestos-containing or presumed asbestos-containing materials are disturbed.
- Class IV pertains to custodial activities where employees clean up asbestos-containing waste and debris.

There are equivalent regulations in states with OSHA-approved state plans.

## **What are the permissible exposure limits for asbestos?**

Employee exposure to asbestos must not exceed 0.1 fiber per cubic centimeter (f/cc) of air, averaged over an 8-hour work shift. Short-term exposure must also be limited to not more than 1 f/cc, averaged over 30 minutes. Rotation of employees to achieve compliance with either permissible exposure limit (PEL) is prohibited.

## **Are employers required to conduct exposure monitoring?**

In construction and shipyard work, unless you are able to demonstrate that employee exposures will be below the PELs (a "negative exposure assessment"), you are generally required to conduct daily monitoring for workers in Class I and II regulated areas. For workers in other operations where exposures are expected to exceed one of the PELs, you must conduct periodic monitoring. In general industry, you must perform initial monitoring for workers who may be exposed above a PEL or above the excursion limit. You must conduct subsequent monitoring at reasonable intervals, and in no case at intervals greater than 6 months for employees exposed above a PEL.

## **Must employers create regulated areas?**

You must create controlled zones known as regulated areas that are designed to protect employees where certain work with asbestos is performed. You must limit access to regulated areas to authorized persons who are wearing appropriate respiratory protection. You must also prohibit eating, smoking, drinking, chewing tobacco or gum, and applying cosmetics in these areas. You must display warning signs at each regulated area. In construction and shipyards, workers must perform Class I, II, and III asbestos work (and all other

operations where asbestos concentrations may exceed a PEL) within regulated areas. In general industry, you must establish regulated areas wherever asbestos concentrations may exceed a PEL.

## What compliance methods must employers use to control exposures?

You must control exposures to or below the PELs using engineering controls and work practices to the extent feasible. Where feasible engineering controls and work practices do not ensure worker protection at the exposure limits, you must reduce employee exposures to the lowest levels achievable and then supplement them with respiratory protection to meet the PELs. In construction and shipyards, each work classification has specific control method requirements. In general industry, specific controls are prescribed for brake and clutch repair work. For example, you must prohibit certain practices, such as the use of compressed air, to remove asbestos.

## When are employers required to provide respiratory protection for workers?

You must provide and ensure the use of respirators when a PEL is exceeded. In construction and shipyards, you must require workers to use respirators when performing certain work. Generally, the level of exposure determines the type of respirator needed. In addition, the standards specify the type of respirator to be used for certain asbestos work. (See *CFR* 1910.134.) Employees must get respirator training and medical clearance to use respirators.

## Are employers required to provide protective clothing for workers?

Yes. For any employee exposed to airborne concentrations of asbestos that exceed a PEL, you must provide and require the use of protective clothing such as coveralls or similar full-body clothing, head coverings, gloves, and foot coverings. You must provide face shields, vented goggles, or other appropriate protective equipment wherever the possibility of eye irritation exists and require workers to wear them.

## Must employers provide hygiene facilities?

Yes. You must establish decontamination areas and hygiene practices for employees exposed above a PEL. In addition, employees may not smoke in work areas that might expose them to asbestos.

## Do OSHA standards require employers to provide training?

Yes. In construction and shipyards, you must provide training for employees exposed above a PEL and for employees involved in each identified work classification. The specific training requirements depend upon the particular class of work being performed. In general

industry, you must provide training to all employees exposed above a PEL. You must also provide asbestos awareness training to employees who perform housekeeping operations covered by the standard. You must place warning labels on all asbestos products, containers, and installed construction materials when feasible.

## What are employers required to provide concerning medical examinations?

In construction and shipyards, you must provide medical examinations for workers who, for 30 or more days per year, engage in Class I, II, or III work or experience exposure above a PEL. In general industry, you must provide medical examinations for workers who are exposed above a PEL.

## What are the recordkeeping requirements for asbestos exposures?

You must keep accurate records of the following:

- All measurements taken to monitor employee exposure to asbestos—30 years;
- Medical records, including physician's written opinions—duration of the employee's employment plus 30 years; and
- Training records—1 year beyond the last date of employment.

## How can you get more information on safety and health?

OSHA has various publications, standards, technical assistance, and compliance tools to help you, and offers extensive assistance through workplace consultation, voluntary protection programs, grants, strategic partnerships, state plans, training, and education. OSHA's *Safety and Health Program Management Guidelines* (*Federal Register* 54:3904-3916, January 26, 1989) detail elements critical to the development of a successful safety and health management system. This and other information are available on OSHA's website.

- For one free copy of OSHA publications, send a self-addressed mailing label to OSHA Publications Office, P.O. Box 37535, Washington, DC 20013-7535; or send a request to our fax at (202) 693-2498, or call us at (202) 693-1888.
- To order OSHA publications online at [www.osha.gov](http://www.osha.gov), go to **Publications** and follow the instructions for ordering.
- To file a complaint by phone, report an emergency, or get OSHA advice, assistance, or products, contact your nearest OSHA office under the "U.S. Department of Labor" listing in your phone book, or call toll-free at (800) 321-OSHA (6742). The teletypewriter (TTY) number is (877) 889-5627.
- To file a complaint online or obtain more information on OSHA federal and state programs, visit OSHA's website.

This is one in a series of informational fact sheets highlighting OSHA programs and standards. It does not impose any new compliance requirements or carry the force of legal opinion. For compliance requirements of OSHA standards or regulations, refer to *Title 29 of the Code of Federal Regulations*. This information will be made available to sensory impaired individuals upon request. Voice phone is (202) 693-1999. See also OSHA's website at [www.osha.gov](http://www.osha.gov).





## **APPENDIX D**

### **FACILITY LOCATION**

## Google Maps 300 Fibre Way



Map data ©2017 Google 1000 ft

# Signature Certificate



Document Reference: 9L6S4DI7GJMCS4ZTYECMR4

## RightSignature

Easy Online Document Signing



Thomas Rhodes

Party ID: DYX6JYIBK2HSUDYZRC6PRR

IP Address: 173.8.213.21

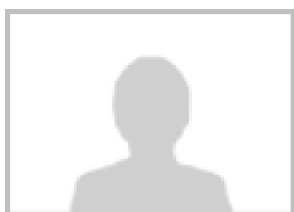
VERIFIED EMAIL: trhodes@montrose-env.com

Electronic Signature:

*Thomas Rhodes*

Multi-Factor  
Digital Fingerprint Checksum

f4b2210f40308590818e4c14b7244016568f8ba4



Joe Heffernan

Party ID: HT5V3AJ7GJMZWJ3KFDS5B

IP Address: 173.8.213.21

VERIFIED EMAIL: jheffernan@montrose-env.com

Electronic Signature:

*Joe Heffernan*

Multi-Factor  
Digital Fingerprint Checksum

897841039f0e0d63dba4410f9af91d342b08d8ac



### Timestamp

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### Audit

All parties have signed document. Signed copies sent to: Thomas Rhodes and Joe Heffernan.

Document signed by Joe Heffernan (jheffernan@montrose-env.com) with drawn signature. - 173.8.213.21

Document signed by Thomas Rhodes (trhodes@montrose-env.com) with drawn signature. - 173.8.213.21

Document viewed by Thomas Rhodes (trhodes@montrose-env.com). - 173.8.213.21

Document viewed by Joe Heffernan (jheffernan@montrose-env.com). - 173.8.213.21

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